



---

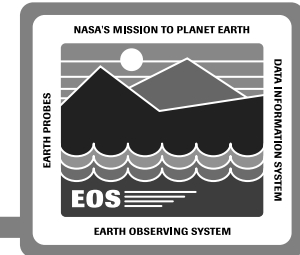
# FOS System Process Flow

## Andy Miller

---

21 October 1996

# FOS CSR Roadmap



## Overview Material

### FOS Overview

- CSR Objectives
- FOS Status & Schedule

### TRR Action Item Summary

- Review each TRR action item
- Present status of each

## FOS System Status

### FOS Release A Summary

- Release A Capabilities
- System Enhancements

### FOS System Process Flows

- Test Procedure update
- Requirements check-off
- Build & Delivery
- NCR

### EOC Installation Status

- Hardware status
- COTS status
- Open items

## FOS Dry-Run Phase

### Dry-Run Test Results

- Dry-Run Test Status
- Dry-Run Requirements Status
- Technical Issues and Liens

## FOS Acceptance Test Phase

### Acceptance Test Plans

- EOC test environment
- EOC test activities
- EOC test process

### Audits

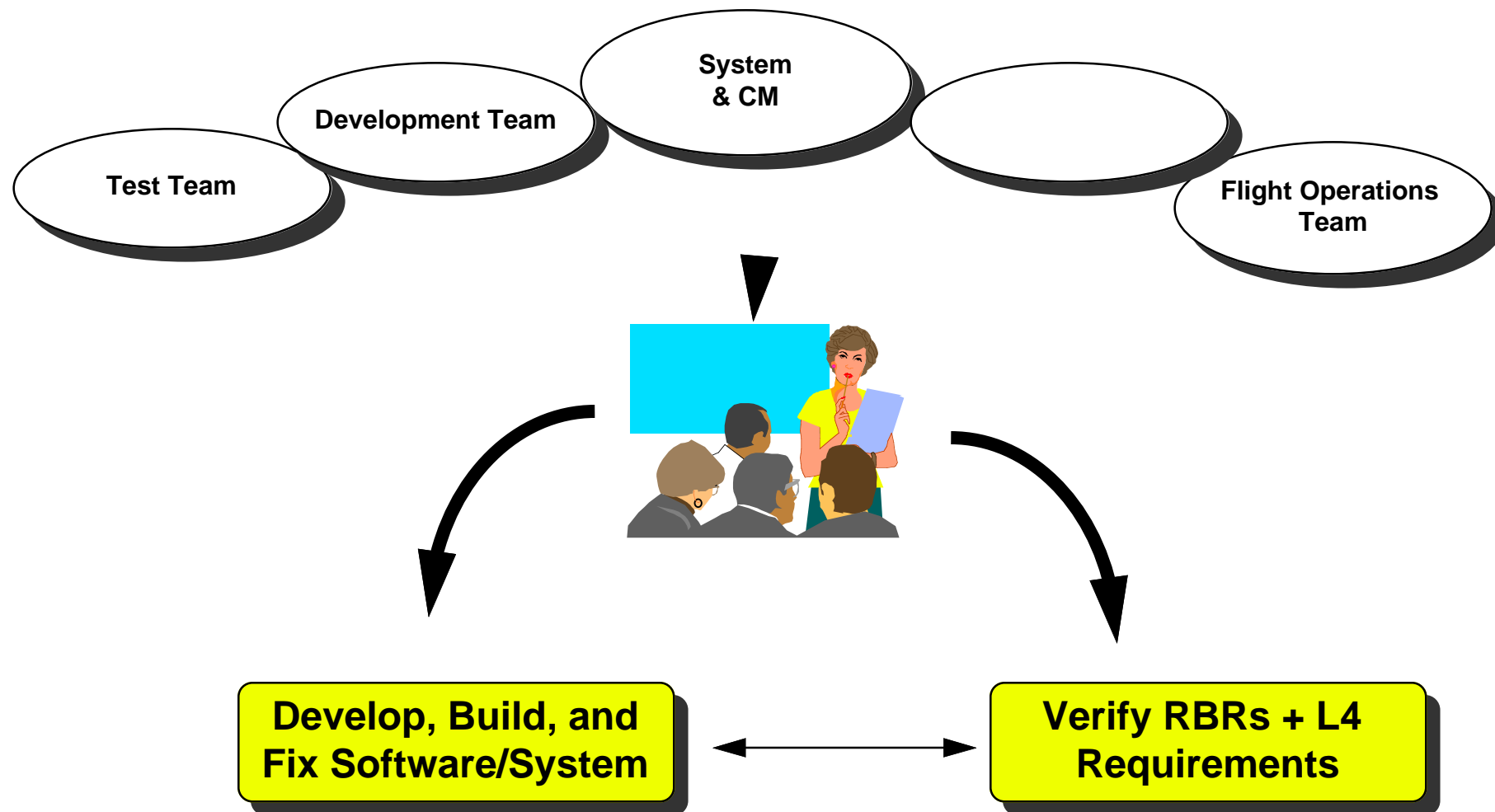
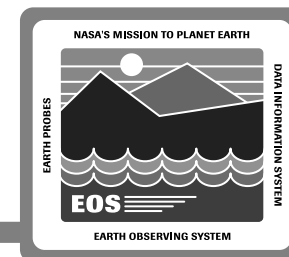
- VDD
- PCA and FCA

## FOS Next Steps

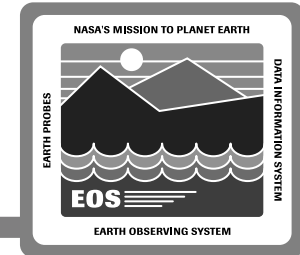
### Post-Acceptance Test

- External Eng'g Tests
- ECT #1
- IST Delivery

# FOS Dry-Run Phase Collaboration

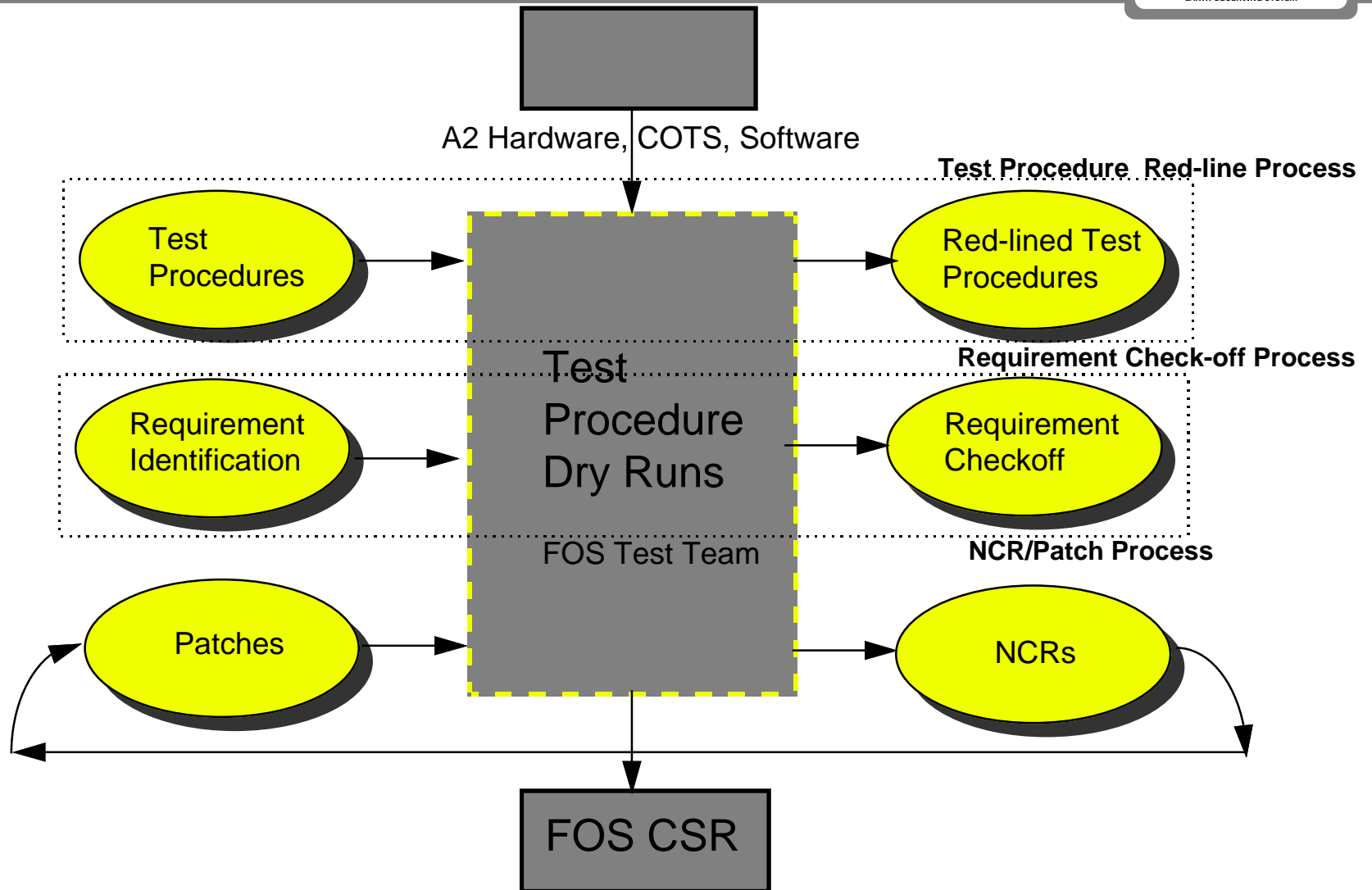
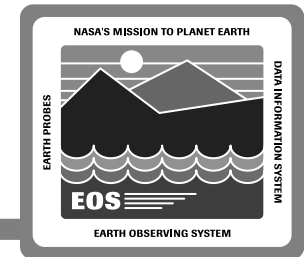


# FOS Dry-Run Phase Roles & Responsibilities

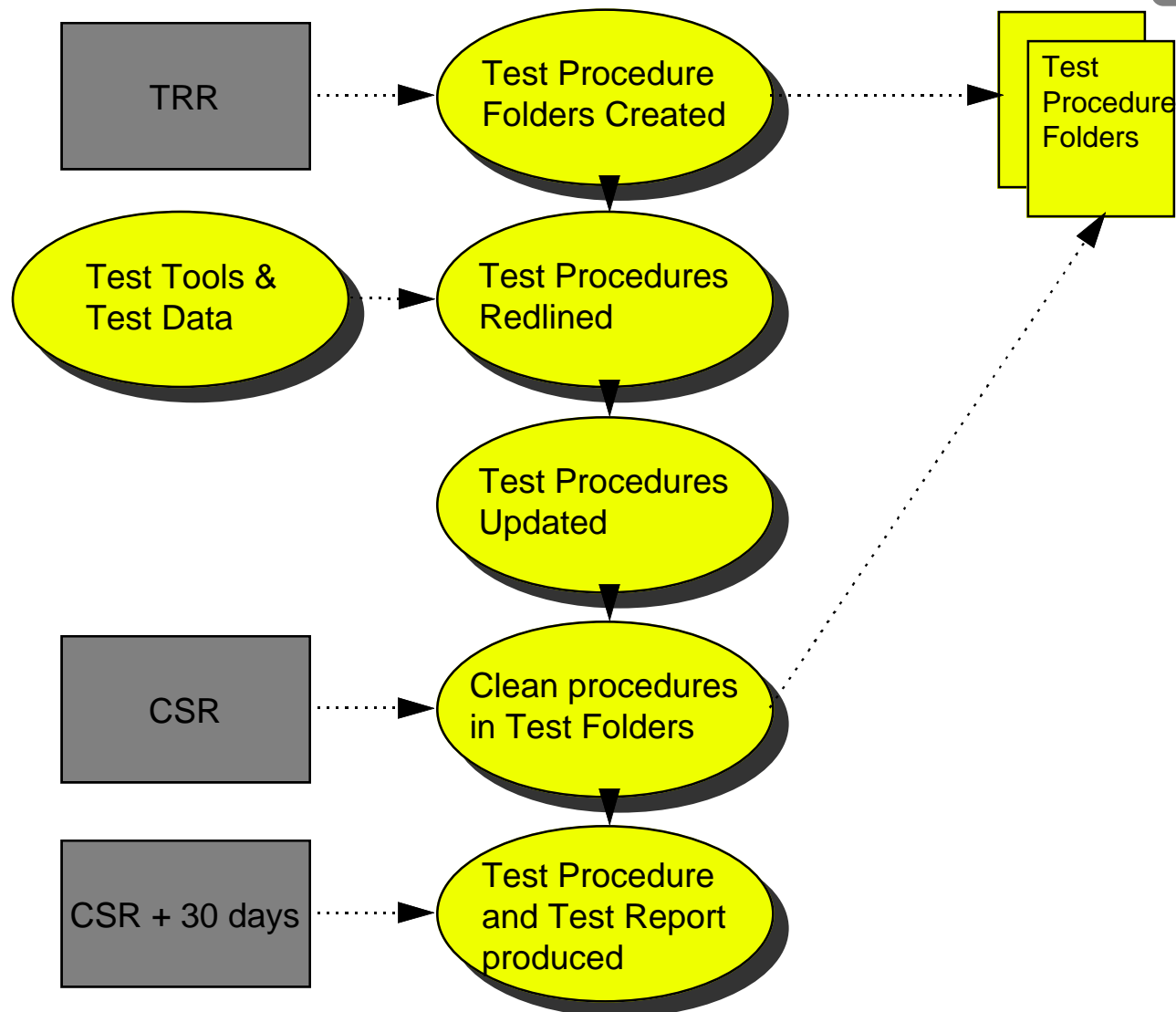
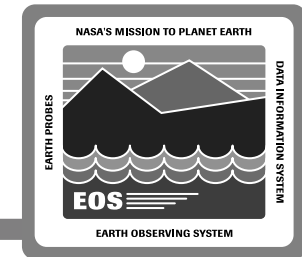


FOS Team Roles	Responsibilities
Test Team	Dry-Run Testing Test Procedure Red-lines Requirements Check-off Identification of NCRs NCR Verification
Development Team	Identification of NCRs NCR Fixes NCR & Patch Regression Test
System/CM Team	Build system Develop system scripts Installation & Cfg at EOC COTS, System upgrades
Quality Assurance	Monitor Dry-Run Testing Monitor Patch and NCR Process
FOT	Monitor Dry-Run Tests

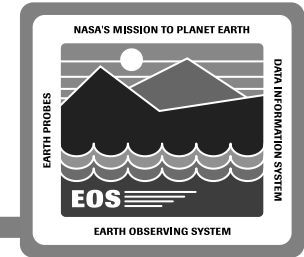
# Dry-Run Process



# Test Procedure Production Process (Dry-Run Phase)

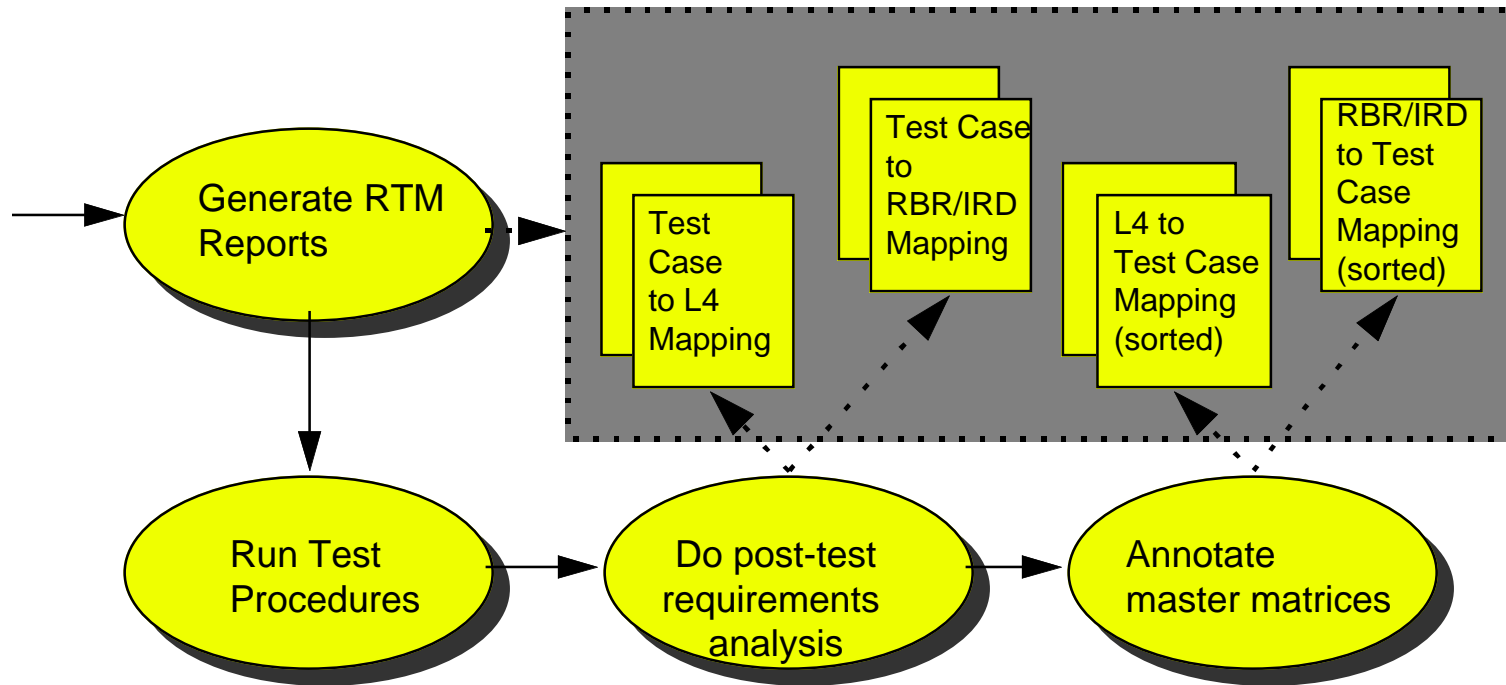
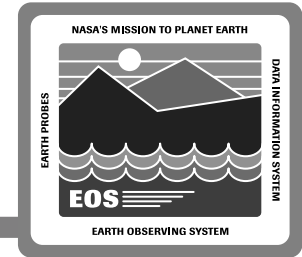


# Test Procedure Production Process (Dry-Run Phase) (cont.)



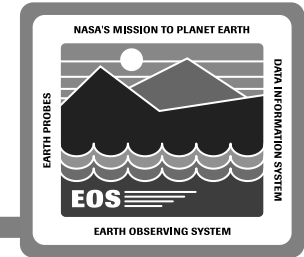
- Following TRR, folders were created for each test procedure
- During the dry run phase, procedures were red-lined as they progressed through each dry-run pass
- Permanent updates were made to the test procedures as time permitted during the dry run phase
- Prior to CSR, all procedures were updated and clean copies of the procedures were placed in the folders
- These folders will be used for Acceptance Testing
- 30 days after CSR, the Test Procedure document will be produced; it will contain a snapshot of the procedures at CSR

# Requirements Check-off Process (Dry-Run Phase)





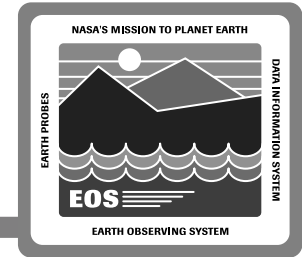
# Requirements Check-off Process (Dry-Run Phase) (cont.)



- **Generate RTM reports (System Engineering)**
  - Used 09/16/96 RTM baseline with October Information-only CCR changes to test links (CCR #96-1139)
  - Produced four reports: Test case to Level 4, Test case to RBR, Level 4 to test case (sorted), and RBR to test case (sorted)
- **Run test procedures (Test Team)**
  - Verify functionality (requirements) throughout test
- **Do post-test analysis of requirements (Test Team)**
  - Use test case to requirements mappings to determine which requirements are associated with each procedure
  - Annotate each requirement as Verified, Partially Verified, or Unverified

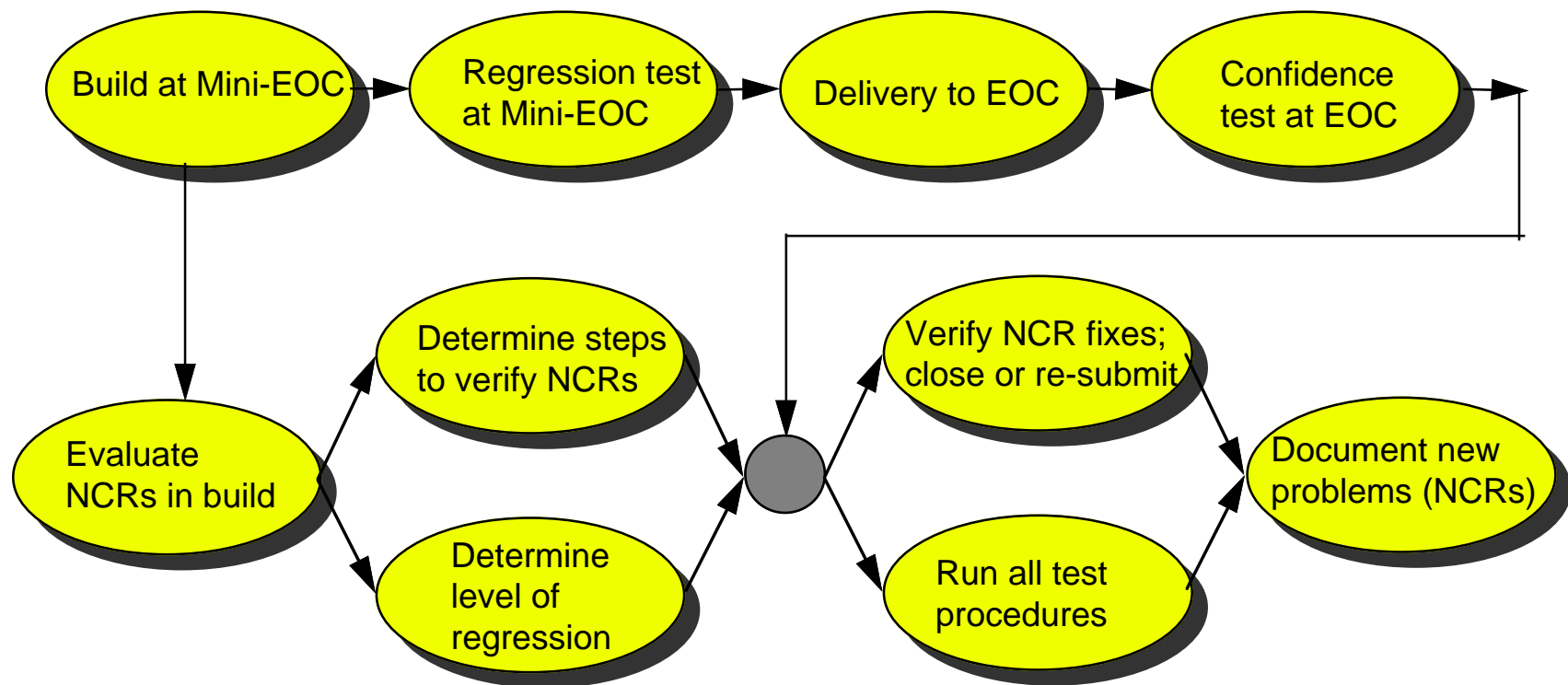
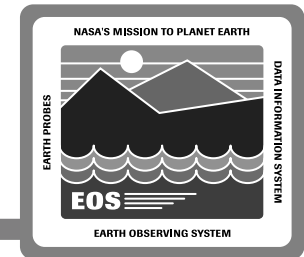
# Requirements Check-off Process (Dry-Run Phase) (cont.)

---

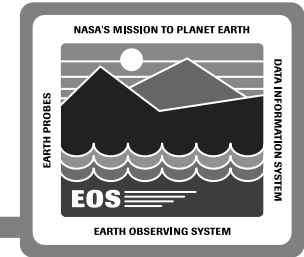


- **Annotate requirement to test case sorted mappings**
  - **Used as master requirements matrix**
  - **Visually demonstrates requirement coverage**

# NCR/Patch Process



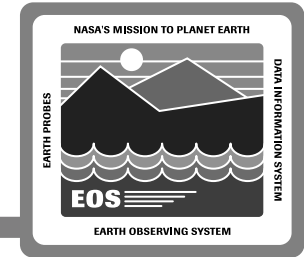
# NCR/Patch Process (cont.)



- **Build at Mini-EOC (System Build Team/CM)**
- **Evaluate NCRs in build (Test Team)**
  - Based on build paperwork, DDTs is updated with all NCRs in build
  - Test lead assigns NCRs to a related test case for verification
  - Test lead requests additional information from developers on NCRs which must be verified outside of a known test procedure
  - Test lead determines the type and extent of regression testing necessary (rerun test procedures, exercise particular functions, etc.)
- **Regression Test at Mini-EOC (Development Team/Test Team)**
  - Developers check out subsystem integrity and NCR fixes
  - Test Team has visibility

# NCR/Patch Process (cont.)

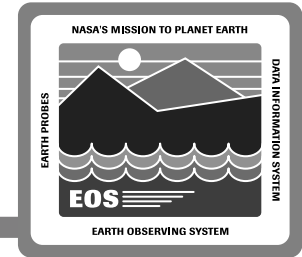
---



- **Delivery to EOC (System Build Team/CM)**
- **Confidence Test at EOC (Test Team)**
  - **Developers support the test or are on call**
  - **Test Team runs CON 1000A (confidence test)**
- **Verify NCR fixes (Test Team)**
  - **Test Team updates DDTs with verified NCRs and verification steps**
  - **NCRs for closure are forwarded to the NCR Review Board (see NCR Work-off Process)**
  - **NCRs which aren't fixed are sent back to the NCR Review Board for assessment (see NCR Work-off Process)**

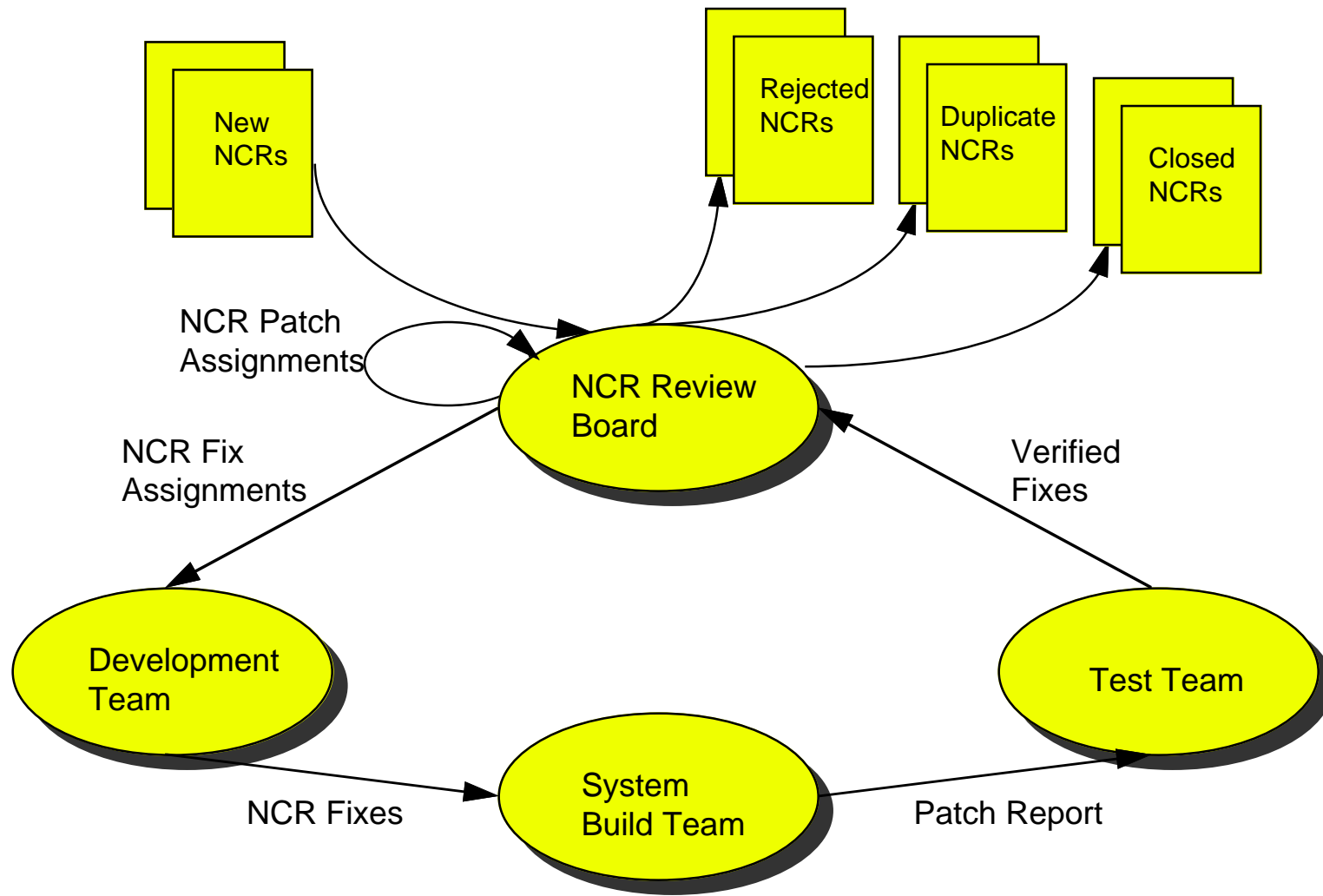
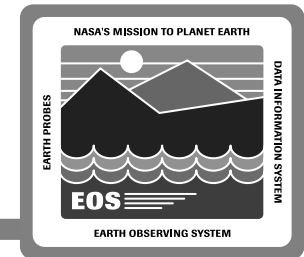
# NCR/Patch Process (cont.)

---

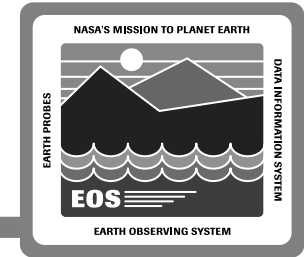


- **Dry run all test procedures (Test Team)**
  - **Red-line/update procedures**
  - **Document all problems via NCRs (see NCR Work-off Process)**
  - **Complete requirement check-off (see Requirement Check-off Process)**

# NCR Work-off Process



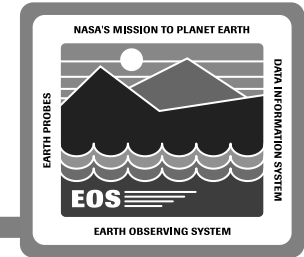
# NCR Work-off Process (cont.)



- **NCR Review Board Activities**
  - All new NCRs are presented to the FOS NCR Review Board
  - NCRs are accepted and assigned to an integration lead
    - Each NCR is planned for inclusion in a particular patch or assigned to Release B
  - NCRs are closed as enhancements, closed as duplicates, closed as operator error/invalid, or rejected
  - NCRs which have been fixed and verified by the Test Team are presented to the FOS NCR Review Board for closure



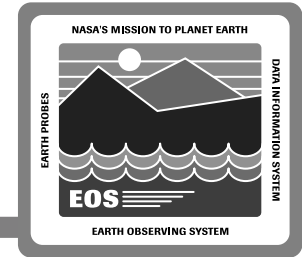
# NCR Work-off Process (cont.)



- **NCR Fixes**
  - Integration leads assign NCRs to developers, who analyze the problem
  - Developers either fix the problem or determine that the NCR is not valid (operator error, etc.)
- **Buils/Patch Reports**
  - Build paperwork (which references NCR numbers) is collected by the System Build Team/CM
  - The System Build Team, with the cooperation of the Development team, verifies that the NCRs planned for the build are included in the build
  - Following the build, the System Build Team/CM generates a Patch Report containing the IDs of all NCRs included in the build

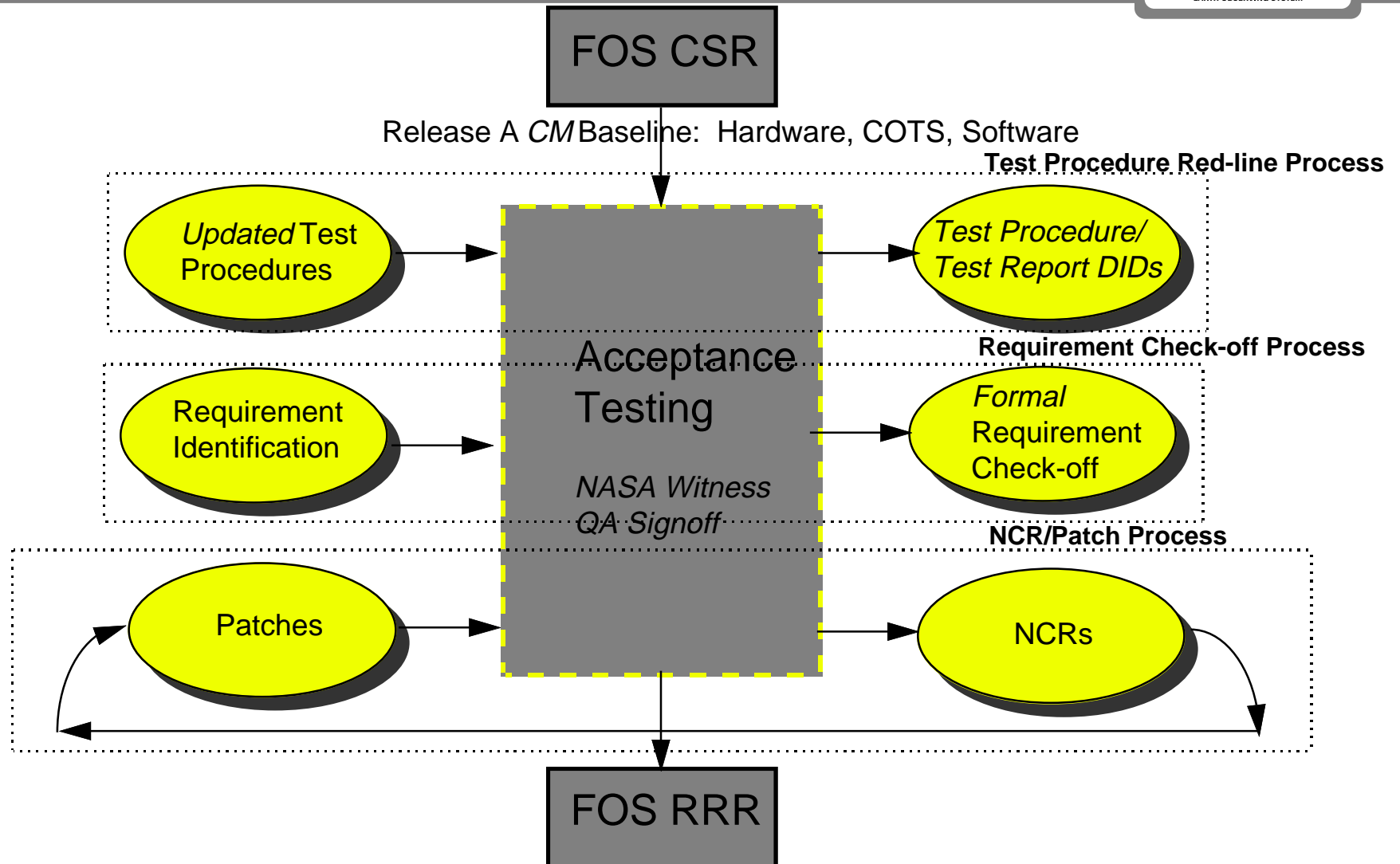
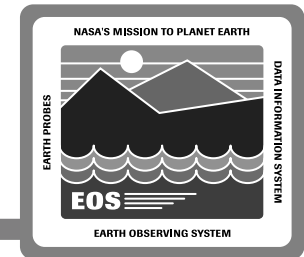
# NCR Work-off Process (cont.)

---

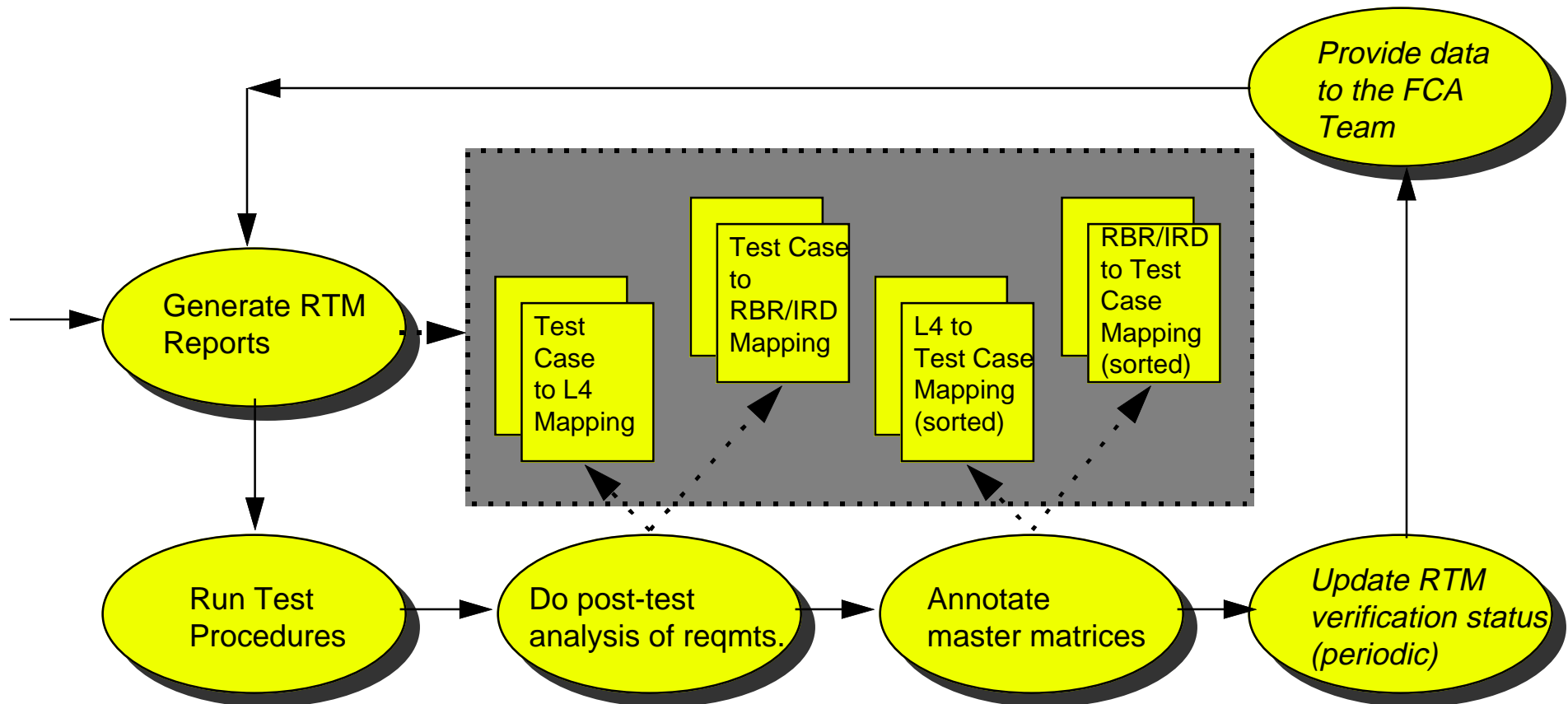
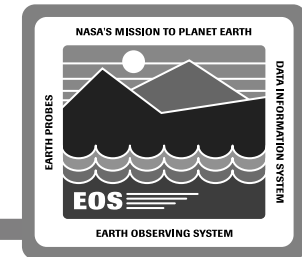


- **NCR Fix Verification**
  - **NCR fixes are tested at the Mini-EOC prior to delivery to the EOC by the Development Team**
  - **With the assistance of the Development Team, the Test Team determines specific verification steps for each NCR fix**
  - **At the EOC, the Test Team accepts the build and verifies that the NCRs listed in the Patch Report are fixed**

# Acceptance Test Process



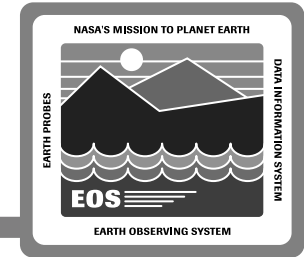
# Requirements Check-off Process (Acceptance Test Phase)



*Italics denote changes from Dry-Run slide*

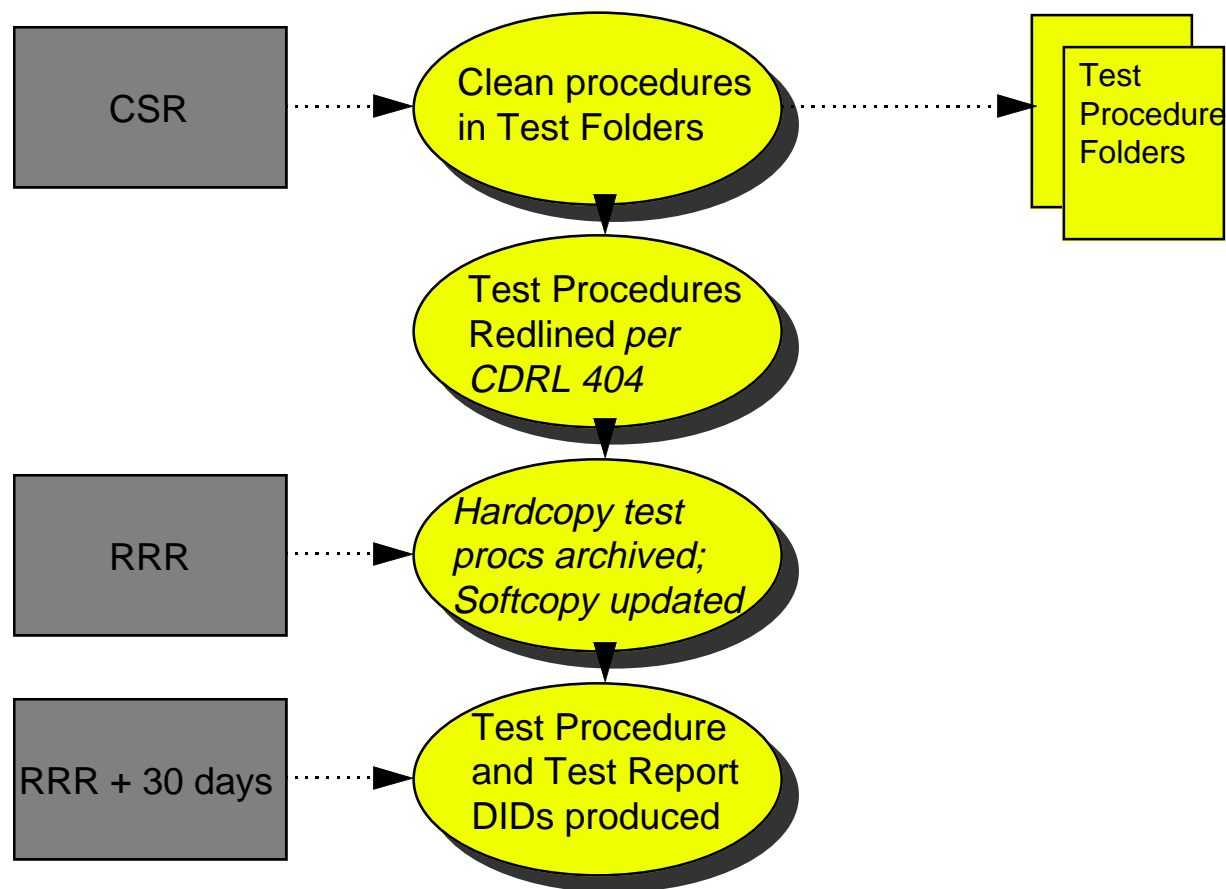
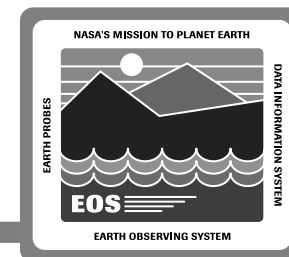
# Requirements Check-off Process

---

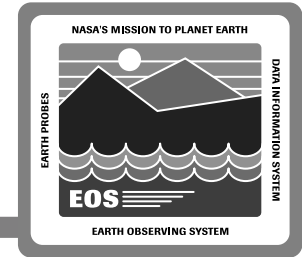


- **Changes from Dry-Run Phase**
  - **Periodically update RTM Level 4 and RBR verification status**
  - **Provide updated requirement verification information to the FCA Team**

# Test Procedure Production Process (Accept. Test Phase)



# Test Procedure Production Process (Accept. Test Phase) (cont.)



- Prior to CSR, all procedures were updated and clean copies of the procedures were placed in the folders
- During the Acceptance Test phase, procedures will be red-lined according to the procedure documented in DID 404, Procedure for Control of Unscheduled Activities During Verification for the ECS Project
- At the completion of the Acceptance Test phase, the hardcopy red-lined procedures will be archived with the test logs, results, data, etc.
- In addition, the softcopy document will be updated to reflect all modifications during the Acceptance Test phase
- 30 days after RRR, the Test Procedure document will be produced; it will contain the procedures in their final form